

## REMARKS

Claims 1-18, 21, and 24-53 are pending in the present application. Claims 25-42 are allowed. Claims 1-18, 21, 24, and 43-53 stand rejected.

Claims 1, 12-15 and 43 stand rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 4,695,123 to Chang et al., and further in view of U.S. Patent 6,144,779 to Binkley et al. The Examiner asserts that Chang et al teaches removing, cladding, removing a portion of the core and replacing it with a metal layer. As the Examiner further asserts, Chang et al. "fails to further disclose the optical material to be selected from a group consisting of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material with a high verdet constant and a material with amplification properties."

Further, Applicant asserts that Chang et al. fails to teach or suggest any of these optical materials. Chang et al discloses only a metal layer for propagation of surface plasma waves. (Chang et al col. 7 lines 55-59). Because only metals can serve as conduits for such surface plasma waves (Chang et al col. 8 lines 22-36), Applicant further asserts that Chang teaches away from using the claimed materials.

The Examiner asserts that "since the verdet constant is a constant dealing with magnetic properties in materials and metals, it would have been obvious at the [time] the invention was made to a person having ordinary skill in the art to have used a metal with a high verdet constant to replace the removed portion of the core. Applicant asserts that there is no teaching in Chang et al. to use a metal with a high verdet constant, nor is there a reasonable expectation of success to arrive at a method or device that includes a material with a high verdet constant as recited in claims 1, 12-15 and 43.

The Examiner asserts that Binkley et al. "also discloses removing part of the core and replacing the core with materials of different properties." Applicant asserts that there is no teaching or suggestion in Binkley to both remove a least a section of a cladding of an optical fiber and remove a least a portion of the core of an optical fiber. Applicant further asserts that there is no teaching or suggestion in Chang et al. or Binkley et al to combine

these references. Nor is there a reasonable expectation of success using Chang et al, alone or in combination with Binkley et al. to arrive at a device for use in fiber optic applications comprising an optical fiber with a portion of cladding removed and a portion of exposed core removed and replaced with at least one optical material selected from those recited in claims. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 1, 12-15 and 43 stand rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 4,695,123 to Chang et al., and further in view of U.S. Patent 5,710,852 to Weber. The Examiner asserts that Chang et al teaches removing, cladding, removing a portion of the core and replacing it with a metal layer. As the Examiner also asserts, Chang et al. "fails to further disclose the optical material to be selected from a group consisting of an electro-optic polymer, a thermo-optic material, a rare-earth doped material, a material with a high verdet constant and a material with amplification properties." Further, Applicant asserts that Chang et al. fails to teach or suggest any of these optical materials. Chang et al discloses only a metal layer for propagation of surface plasma waves. ( Chang et al col. 7 lines 55-59). Because only metals can serve as conduits for such surface plasma waves (Chang et al col. 8 lines 22-36), Applicant further asserts that Chang teaches away from using the claimed materials.

The Examiner further asserts that "since the verdet constant is a constant dealing with magnetic properties in materials and metals, it would have been obvious at the [time] the invention was made to a person having ordinary skill in the art to have used a metal with a high verdet constant to replace the removed portion of the core. Applicant asserts that there is no teaching in Chang et al., or Weber, to use a metal with a high verdet constant, nor is there a reasonable expectation of success to arrive at a method or device that includes a material with a high verdet constant as recited in claims 1, 12-15 and 43.

The Examiner asserts that Weber "also discloses removing part of the core and replacing the core with materials of different properties." Applicant asserts that there is no teaching or suggestion in Weber to both remove a least a section of a cladding of an optical fiber and remove a least a portion of the core of an optical fiber. Weber teaches only an

optical waveguide with a core doped with erbium. Applicant asserts that there is no teaching or suggestion in Chang et al. or Weber et al to combine these references. Nor is there a reasonable expectation of success using Chang et al, alone or in combination with Weber to arrive at a device for use in fiber optic applications comprising an optical fiber with a portion of cladding removed and a portion of exposed core removed and replaced with at least one optical material selected from those recited in claims. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 2-4 and 10-11 stand rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 4,695,123 to Chang et al, in view of U.S. Patent 6, 144,779 to Binkley et al. or U.S. Patent 5,710,852 to Weber, and in further view of U.S. Patent 6,292,282 to Mossberg et al. Claims 2-4 and 10-11 are dependent on claim 1 and dependent claims thereon. Applicants assert that Chang et al does not teach or suggest any of the optical materials recited in Claim 1. Chang et al discloses only a metal layer for propagation of surface plasma waves. Only metals can serve as conduits for such surface plasma waves. (Chang et al col. 7 lines 55-59; col. 8 lines 22-36.) Therefore, there would be no reasonable expectation of success using Chang et al alone or in combination with Binkley et al., and further in light of Mossberg et al, or in combination with Weber, and further in light of Mossberg et al, to arrive at the instant invention.

Further, Mossberg et al teaches only removal of cladding. There is no suggestion or teaching in Mossberg et al. of removal of the cladding and at least a portion of core, as recited in amended claim 1, and there is no suggestion of any optical materials recited in Claim 1. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 5 and 8 stand rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 4,695,123 to Chang et al in view of U.S. Patent 6,144,779 to Binkley et al. or U.S. Patent 5,710,852 to Weber, further view of U.S. Patent 4,798,438 to Moore et al. Claims 5 and 8 are dependent on claim 1 and dependent claims thereon. As the Examiner asserts, Chang et al. in view of Binkley et al. or Weber does not specifically disclose an asymmetric fiber or etching and polishing as methods to remove optical fiber material.

Further, Moore et al teaches only removal of cladding. There is no suggestion or teaching in Moore et al of removal of the cladding and at least a portion of core, as recited in amended claim 1.

Further, neither Moore et al or Chang et al in view of Binkley et al or in view of Weber teaches or suggests using an optical fiber wherein the optical fiber is asymmetric as recited in claim 5. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 6, 7 and 9 stand rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 4,695,123 to Chang et al. in view of U.S. Patent 6,144,779 to Binkley et al or U.S. Patent 5,710,852 to Weber, and in further view of U.S. Patent 4,798,438 to Moore et al. as applied to claims 5 and 8, and further in view of U.S. Patent 6,292,282 to Mossberg et al. Claims 6, 7 and 9 are dependent on claim 1 and dependent claims thereon. As the Examiner asserts Chang et al, Binkley et al Weber and Moore fail to disclose masking a face and then etching to remove cladding nor does Chang et al in and Moore et al [teach] etching and excavating as methods to remove optical fiber material. Further, Moore et al teaches only removal of cladding. There is no suggestion or teaching in Moore et al of removal of the cladding and at least a portion of core, as recited in amended claim 1. Further, there is no teaching or suggestion in Mossberg to mask a face of an asymmetric fiber, as recited in claim 7. Nor is there any teaching or suggestion in Mossberg et al to remove the core using etching or excavating as recited in claim 6, nor is there any teaching or suggestion in Mossberg et al to use an asymmetric fiber and etch a full circumference of the fiber as recited in claim 7. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 44-53 stand rejected under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 4,695,123 to Chang et al in view of U.S. Patent 6,144,779 to Binkley et al. or U.S. Patent 5,710,852 to Weber. Claims 44-53 are dependent on claim 43 and dependent claims thereon.

Further, with regards to claims 44, 45 and 49, the Examiner states that “Chang et al in view of Binkley et al or Weber fails to disclose an activation means for altering optical properties and also fails to disclose an activation means further comprising an electrode. However, Chang et al does disclose a photodetector. A photodetector produces an output electrical signal just like an electrode...” Applicant respectfully asserts that a photodetector is a device used to **detect** incident radiation, as is known to one skilled in the art. (Emphasis Applicant’s). A photodetector does not produce an output electrical signal that can be used as an activation means for altering optical properties of any material. Accordingly, the Applicant respectfully requests withdrawal of these claim rejections and claims dependent thereon.

Further, with regards to claims 46, 52 and 53, Chang et al in view of Binkley et al or in view of Weber fails to teach or suggest using an optical polymer, a diffraction grating or an optical material with a high verdet constant. Accordingly, the Applicant respectfully requests withdrawal of these claim rejections.

With regards to claims 47, 48, 50, and 51, Applicant asserts that there is no teaching or suggestion in Chang et al in view of Binkley et al or Weber to join a second asymmetric fiber. Further, there is no teaching or suggestion to use a protective layer over an electrode, or to use rare earth doped materials in optical amplifier or a source. Accordingly, the Applicant respectfully requests withdrawal of these claim rejections.

Claims 16-18, 21, and 24 stand rejected 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 4,695,123 to Chang et al in view of U.S. Patent 6,144,779 to Binkley et al. or U.S. Patent 5,710,852 to Weber. Claims 16, 17, 21 and 24 depend on claim 1 or dependent claims thereon and for at least the reasons presented above, now depend on an allowable claim. With regards to claim 18, the Examiner states that “Chang et al in view of Binkley et al or Wever fails to disclose affixing an activation means comprising an electrode. However, Chang et al does disclose a photodetector. A photodetector produces an output electrical signal just like an electrode...” Applicant respectfully asserts that a photodetector is a device used to **detect** incident radiation, as is known to one skilled in the art. (Emphasis Applicant’s). A photodetector does not produce an output electrical signal

that can be used as an activation means for altering optical properties of any material. Accordingly, the Applicant respectfully requests withdrawal of these claim rejections.

### CONCLUSION

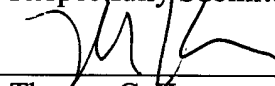
In view of the foregoing remarks, Applicant submits that the pending claims are in condition for allowance. Early and favorable reconsideration is respectfully solicited.

The Examiner may address any questions raised by this submission to the undersigned at 617-832-1000. Should an extension of time be required other than provided for, Applicant hereby petitions for same and request that the extension fee and any other fee required for timely consideration of this application be charged to Deposit Account, No. 06-1448.

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Respectfully Submitted,



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